

# EMSL Analytical, Inc. 200 Route 130 North, Cinnaminson, NJ 08077

Order ID: 281803015

Attn: Alex Green Customer ID: SREC85

S&R Environmental Consulting, Inc. Customer PO: 018013 5801 Logan Street, #200 Date Received: 07/06/18

Denver, CO 80216

Phone: (303) 297-1645 EMSL Order: 281803015

Project: EPA – Floor 5 – Clerarance EMSL Project ID:

Report Date: 07/09/18 Date Analyzed: 07/06/18

# Test Report – 4-Phenylcyclohexene Analysis by GC/FID via Modified OSHA CSI Method

Sample ID	Identification	Sample Volume (L)	Sample Weight (µg)	Sample Conc. (µg/m³)	Reporting Limit (µg/m³)
281803015-0001	5-CL-4PCH	24	< 0.030	<1.3	1.3
Desorption Blank	-	0	< 0.030	ND	NA

# Notes:

- 1. Samples were received in acceptable condition unless otherwise noted.
- 2. These results relate only to the samples tested.
- 3. Sample results are not blank corrected unless otherwise noted.
- 4. Discernable field blank(s) submitted with samples if reported above.

AS/VMD

Analyst

Scott VanEtten, CIH- Lab Manager Or other approved signatory



# **EMSL** Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077

Phone/Fax: (800) 220-3675 /

http://www.EMSL.com / IndustrialHygienelab@emsl.com

EMSL Order ID: Customer ID: Customer PO:

281803016 SREC85 018013

Project ID:

Attn: Alex Green

S&R Environmental Consulting, Inc.

5801 Logan Street, #200

Denver, CO 80216

Phone: Fax:

(303) 297-1645 (303) 297-1646

Collected:

Received: 7/06/2018 Analyzed: 7/06/2018

Proj: EPA - Floor 5 - Clearance

Test Report: Formaldehyde Analysis by HPLC of Solid Sorbent Tubes via NIOSH 2016, Issue 2, 3/15/03 modified

Sample ID	Identification	Volume	Sample Weight	Sample Concentration		Reporting Limit
5-CL-FORM		24 L	0.26 μg	0.011 mg/m³	0.0087 ppm	0.0021 mg/m³
281803016-0001						
Media Blank		N/A	<0.050 µg	<0.050 µg	N/A	N/A

N/A = Not Applicable

Analyst(s)

Alicia Shafer

Scott Van Etten, CIH, Laboratory Manager

SWVayW

Any questions please contact Scott VanEtten.

Initial report from: 07/09/2018 09:27:19

- 1. Samples were received in acceptable condition unless otherwise noted.
- These results relate only to the samples tested.
   Sample results are blank corrected. Reporting Limits for samples without volumes, such as Field Blanks, are 0.050 ug.
- 4. A discernable Field Blank was submitted if listed above as a discrete sample

Samples analyzed by EMSL Analytical - Industrial Hygiene Cinnaminson, NJ AIHA-LAP, LLC--IHLAP Accred. Lab 100194



200 Route 130 North, Cinnaminson, NJ 08077 Phone/Fax: (856)858-4800 / (856)858-4571 http://www.EMSL.com to15lab@EMSL.com

EMSL Order #: **491800613**Customer ID: **SREC85**Customer PO: **18013** 

Attn: Alex Green

Project: EPA - 5th Floor

S&R Environmental Consulting, Inc.

5801 Logan Street, #200 Denver, CO 80216

Phone: **303-297-1645** Fax: **303-297-1646** 

Date Collected: 7/5/2018

Date Received: 7/6/2018

# **Laboratory Report- Sample Summary**

Ī	EMSL Sample ID. Client Sample ID.		Start Sampling Date	Start Sampling Time
Ī	491800613-0001	5-CL-TO15	7/5/2018	9:30 AM

If "Preliminary Report" is displayed in the signature box; this indicates that there are samples that have not yet been analyzed, that are in a preliminary state, or that analysis is in progress but not completed at the time of report issue.

Report Date: 7/9/2018

491800613-1\_R0

Report Revision R0 Revision Comments
Initial Report

Marjorie Howley, Laboratory Manager

Majour Howley

or other approved signatory

Test results meet all NELAP requirements unless otherwise specified. NJDEP Certification #: 03036

The samples associated with this report were received in good condition unless otherwise noted. This report relates only to those items tested as received by the laboratory. The results are not blank corrected unless otherwise noted. Interpretation and use of test results are the responsibility of the client. This report may not be reproduced except in full and without written approval by EMSL Analytical, Inc.

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200 Route 130 North, Cinnaminson, NJ 08077 Phone/Fax: (856)858-4800 / (856)858-4571 http://www.EMSL.com to15lab@EMSL.com

EMSL Order #: **491800613**Customer ID: **SREC85**Customer PO: **18013** 

Attn: Alex Green

Project: EPA - 5th Floor

S&R Environmental Consulting, Inc.

5801 Logan Street, #200 Denver, CO 80216

Phone: **303-297-1645** Fax: **303-297-1646** 

Date Collected: 7/5/2018

Date Received: 7/6/2018

**Laboratory Conformance/ Non-Conformance Summary** 

For the following Samples: 491800613-0001

# Samples met criteria as listed unless otherwise noted.

Sample Pressures/ Vacuums - Samples were received within acceptable range

Holding Times (30 days) - Samples were analyzed within holding times.

**BFB Tune**- Samples were analyzed within 24 hours of an acceptable instrument tuning standard.

Surrogate Recoveries - Samples met surrogate recovery criteria.

Internal Standards - Samples met internal standard area/retention time criteria.

<u>Initial Calibration</u> Initial Calibration criteria met method specification.

<u>Initial Calibration Verification Standard (ICVS)-Second Source</u>- ICVS met method specification with all compounds within 30% deviation. Individual compounds outside the method specification may be listed below.

Continuing Calibration Verification Standard (CCVS)- CCVS met method specification with all compounds within 30% deviation with the following exceptions: Chloromethane, Vinyl chloride and Chloroethane. Of these compounds only chloromethane was found in this sample; the results for this compound may be biased high.

**Ending Calibration Verification Standard (ECVS)-** ECVS met method specification with all compounds within 30% deviation with the following exceptions: Propene, Freons 12 and 114, Chloromethane, Butane, Vinyl Chloride, 1,3-Butadiene, Bromomethane and Chloroethane. Of these compounds Chloromethane and Butane were found in this sample; the results for this compound in the sample may be biased high.

Method Blanks (MB)- Method Blank met method specification with no compounds reported.

Instrument Blanks (IB)- No Instrument Blanks were analyzed.

Reporting Limit Laboratory Control Samples (RLLCS)- RLLCS did not meet method specification with 90% of compounds within the 60-140% recovery range. Individual compounds outside of the recovery range may be listed below. The same compounds failed high in the RLLCS as in the ECVS causing <90% of compounds not meeting criteria.

## **Additional Comments:**

# The following data qualifiers that may have been reported with the data,

- ND- Non Detect. This notation would be used in the results column in lieu of a "U" qualifier.
- **U-** Compound was analyzed for but not detected at a listed and appropriately adjusted reporting level.
- J- Estimated value reported below adjusted reporting limit for target compounds or estimating a concentration for TICs where a 1:1 response is assumed.
- **B** Compound found in associated method blank as well as in the sample.
- E- Estimated value exceeding upper calibration range of instrument. Ethanol and isopropyl alcohol are not specifically targeted to dilute within calibration range.
- **D** Compound reported from additional diluted analysis.
- N- indicates presumptive evidence of a compound based on library search match.

# Method Reference

USEPA: Compendium Method TO-15, "Determination of Volatile Organic Compounds (VOCs) in Air..." Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), January 1999, (EPA/625/R-96/010b).

Marjorie Howley, Laboratory Manager or other approved signatory

Majour Howley



200 Route 130 North, Cinnaminson, NJ 08077 Phone/Fax: (856)858-4800 / (856)858-4571 http://www.EMSL.com to15lab@EMSL.com

EMSL Order #: 491800613
EMSL Sample #: 491800613-1
Customer ID: SREC85
Customer PO: 18013

Attn: Alex Green

S&R Environmental Consulting, Inc.

5801 Logan Street, #200 Denver, CO 80216 Phone: **303-297-1645** Fax: **303-297-1646** 

Date Collected: 7/5/2018
Date Received: 7/6/2018

Project: **EPA - 5th Floor** Sample ID: 5-CL-T015

 Analysis
 Analysis Date
 Analyst Init.
 Lab File ID
 Canister ID
 Sample Vol.
 Dil. Factor

 Initial
 07/06/2018
 mth
 P3390.D
 E12323
 298 cc
 1

**Target Compound Results Summary** 

	1		Result	RL	1	Result	RL	
Target Compounds	CAS#	MW	ppbv	ppbv	Q	ug/m3	ug/m3	Comments
Propylene	115-07-1	42.08	ND	1.0		ND	1.7	
Freon 12(Dichlorodifluoromethane)	75-71-8	120.9	ND	0.50		ND	2.5	
Freon 114(1,2-Dichlorotetrafluoroethan	76-14-2	170.9	ND	0.50		ND	3.5	
Chloromethane	74-87-3	50.49	0.81	0.50		1.7	1.0	
n-Butane	106-97-8	58.12	2.5	0.50		5.9	1.2	
Vinyl chloride	75-01-4	62.50	ND	0.50		ND	1.3	
1,3-Butadiene	106-99-0	54.09	ND	0.50		ND	1.1	
Bromomethane	74-83-9	94.94	ND	0.50		ND	1.9	
Chloroethane	75-00-3	64.52	ND	0.50		ND	1.3	
Ethanol	64-17-5	46.07	64	0.50	Е	120	0.94	
Bromoethene(Vinyl bromide)	593-60-2	106.9	ND	0.50		ND	2.2	
Freon 11(Trichlorofluoromethane)	75-69-4	137.4	ND	0.50		ND	2.8	
Isopropyl alcohol(2-Propanol)	67-63-0	60.10	4.0	0.50		10	1.2	
Freon 113(1,1,2-Trichlorotrifluoroethan	76-13-1	187.4	ND	0.50		ND	3.8	
Acetone	67-64-1	58.08	7.1	0.50		17	1.2	
1,1-Dichloroethene	75-35-4	96.94	ND	0.50		ND	2.0	
Acetonitrile	75-05-8	41.00	1.2	0.50		1.9	0.84	
Tertiary butyl alcohol(TBA)	75-65-0	74.12	ND	0.50		ND	1.5	
Bromoethane(Ethyl bromide)	74-96-4	108.0	ND	0.50		ND	2.2	
3-Chloropropene(Allyl chloride)	107-05-1	76.53	ND	0.50		ND	1.6	
Carbon disulfide	75-15-0	76.14	ND	0.50		ND	1.6	
Methylene chloride	75-09-2	84.94	ND	0.50		ND	1.7	
Acrylonitrile	107-13-1	53.00	ND	0.50		ND	1.1	
Methyl-tert-butyl ether(MTBE)	1634-04-4	88.15	ND	0.50		ND	1.8	
trans-1,2-Dichloroethene	156-60-5	96.94	ND	0.50		ND	2.0	
n-Hexane	110-54-3	86.17	ND	0.50		ND	1.8	
1,1-Dichloroethane	75-34-3	98.96	ND	0.50		ND	2.0	
Vinyl acetate	108-05-4	86.00	ND	0.50		ND	1.8	
2-Butanone(MEK)	78-93-3	72.10	0.56	0.50		1.6	1.5	
cis-1,2-Dichloroethene	156-59-2	96.94	ND	0.50		ND	2.0	
Ethyl acetate	141-78-6	88.10	ND	0.50		ND	1.8	
Chloroform	67-66-3	119.4	ND	0.50		ND	2.4	
Tetrahydrofuran	109-99-9	72.11	ND	0.50		ND	1.5	
1,1,1-Trichloroethane	71-55-6	133.4	ND	0.50		ND	2.7	
Cyclohexane	110-82-7	84.16	ND	0.50		ND	1.7	
2,2,4-Trimethylpentane(Isooctane)	540-84-1	114.2	ND	0.50		ND	2.3	
Carbon tetrachloride	56-23-5	153.8	ND	0.50		ND	3.1	
n-Heptane	142-82-5	100.2	ND	0.50		ND	2.0	
1,2-Dichloroethane	107-06-2	98.96	ND	0.50		ND	2.0	
Benzene	71-43-2	78.11	ND	0.50		ND	1.6	
Trichloroethene	79-01-6	131.4	ND	0.50	ļ	ND	2.7	
1,2-Dichloropropane	78-87-5	113.0	ND	0.50	ļ	ND	2.3	
Methyl Methacrylate	80-62-6	100.12	ND	0.50	ļ	ND	2.0	
Bromodichloromethane	75-27-4	163.8	ND	0.50		ND	3.3	
1,4-Dioxane	123-91-1	88.12	ND	0.50	ļ	ND	1.8	
4-Methyl-2-pentanone(MIBK)	108-10-1	100.2	ND	0.50	<u> </u>	ND	2.0	



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EMSL Order #: 491800613 491800613-1 EMSL Sample #: Customer ID: SREC85 Customer PO: 18013

Attn: Alex Green

S&R Environmental Consulting, Inc.

5801 Logan Street, #200 Denver, CO 80216

Phone: 303-297-1645

303-297-1646 Fax: 7/5/2018 Date Collected: Date Received: 7/6/2018

Sample ID: 5-CL-TO15

Project: EPA - 5th Floor

<u>Analysis</u>	Analysis Date	Analyst Init.	<u>Lab File ID</u>	Canister ID	<u>Sample Vol.</u>	Dil. Factor
Initial	07/06/2018	mth	P3390.D	E12323	298 cc	1

**Target Compound Results Summary** 

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
cis-1,3-Dichloropropene	10061-01-5	111.0	ND	0.50		ND	2.3	
Toluene	108-88-3	92.14	ND	0.50		ND	1.9	
trans-1,3-Dichloropropene	10061-02-6	111.0	ND	0.50		ND	2.3	
1,1,2-Trichloroethane	79-00-5	133.4	ND	0.50		ND	2.7	
2-Hexanone(MBK)	591-78-6	100.1	ND	0.50		ND	2.0	
Tetrachloroethene	127-18-4	165.8	ND	0.50		ND	3.4	
Dibromochloromethane	124-48-1	208.3	ND	0.50		ND	4.3	
1,2-Dibromoethane	106-93-4	187.8	ND	0.50		ND	3.8	
Chlorobenzene	108-90-7	112.6	ND	0.50		ND	2.3	
Ethylbenzene	100-41-4	106.2	ND	0.50		ND	2.2	
Xylene (p,m)	1330-20-7	106.2	ND	1.0		ND	4.3	
Xylene (Ortho)	95-47-6	106.2	ND	0.50		ND	2.2	
Styrene	100-42-5	104.1	ND	0.50		ND	2.1	
Isopropylbenzene (cumene)	98-82-8	120.19	ND	0.50		ND	2.5	
Bromoform	75-25-2	252.8	ND	0.50		ND	5.2	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	ND	0.50		ND	3.4	
4-Ethyltoluene	622-96-8	120.2	ND	0.50		ND	2.5	
1,3,5-Trimethylbenzene	108-67-8	120.2	ND	0.50		ND	2.5	
2-Chlorotoluene	95-49-8	126.6	ND	0.50		ND	2.6	
1,2,4-Trimethylbenzene	95-63-6	120.2	ND	0.50		ND	2.5	
1,3-Dichlorobenzene	541-73-1	147.0	ND	0.50		ND	3.0	
1,4-Dichlorobenzene	106-46-7	147.0	ND	0.50		ND	3.0	
Benzyl chloride	100-44-7	126.0	ND	0.50		ND	2.6	
1,2-Dichlorobenzene	95-50-1	147.0	ND	0.50		ND	3.0	
1,2,4-Trichlorobenzene	120-82-1	181.5	ND	0.50		ND	3.7	
Hexachloro-1,3-butadiene	87-68-3	260.8	ND	0.50		ND	5.3	
Naphthalene	91-20-3	128.17	ND	0.50		ND	2.6	
Total Target Compound Concentration	ns:		80	ppbv		160	ug/m3	

Result **Spike** Surrogate Recovery 9.3 10 93% 4-Bromofluorobenzene

# **Qualifier Definitions**

ND = Non Detect

B = Compound also found in method blank.

E= Estimated concentration exceeding upper calibration range.

D= Result reported from diluted analysis.

# Method Reference

USEPA: Compendium Method TO-15, "Determination of Volatile Organic Compounds (VOCs) in Air..." Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), January 1999, (EPA/625/R-96/010b).



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EMSL Order #: 491800613 EMSL Sample #: 491800613-1 Customer ID: SREC85 Customer PO: 18013

Alex Green

S&R Environmental Consulting, Inc. 5801 Logan Street, #200

Denver, CO 80216

Phone: **303-297-1645** Fax: 303-297-1646

Date Collected: 7/5/2018 Date Received: 7/6/2018

Project: EPA - 5th Floor Sample ID: 5-CL-TO15

<u>Analysis</u>	Analysis Date	Analyst Init.	<u>Lab File ID</u>	Canister ID	Sample Vol.	Dil. Factor
Initial	07/06/2018	mth	P3390.D	E12323	298 cc	1

**Tentatively Identified Compound Results Summary** 

	Tentatively id	entinea		u itesui			
			Result		Result	Retention	
Tentatively Identified Compounds	CAS#	MW(1)	ppbv	Q	ug/m3	Time	Comments
Ethane, 1,1-difluoro-	000075-37-6	66	1.9	JN	5.0	5.23	
Unknown		92	2.3	JN	8.7	5.74	
Unknown		92	2.0	JN	7.4	7.86	
	Total TIC Conce	entrations:	6.2	ppbv	21	ug/m3	

# **Qualifier Definitions**

- (1) = If unknown, MW is assigned as equivalent Toluene (92) for ug/m3 conversion purposes.
- B = Compound also found in method blank.
- J= Estimated value based on a 1:1 response to internal standard.
- N= Presumptive evidence of compound based on library match.

# Method Reference

USEPA: Compendium Method TO-15, "Determination of Volatile Organic Compounds (VOCs) in Air..." Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), January 1999, (EPA/625/R-96/010b).



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EMSL Order #: 491800613 491800613-1 EMSL Sample #: Customer ID: SREC85 Customer PO: 18013

Phone:

Alex Green

303-297-1645 S&R Environmental Consulting, Inc. Fax: 303-297-1646 5801 Logan Street, #200 Date Collected: 7/5/2018 **Denver, CO 80216** Date Received: 7/6/2018

Project: EPA - 5th Floor

Sample ID: 5-CL-TO15

<u>Analysis</u>	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	07/06/2018	mth	P3390.D	E12323	298 cc	1

**Total Volatile Organic Compounds (TVOC) Summary** 

			Result	RL		Result	RL	
Target Compounds	CAS#	MW	ppbv	ppbv	Q	ug/m3	ug/m3	Comments
Chloromethane	74-87-3	50.49	0.81	0.50		1.7	1.0	
n-Butane	106-97-8	58.12	2.5	0.50		5.9	1.2	
Ethanol	64-17-5	46.07	64	0.50	Е	120	0.94	
Isopropyl alcohol(2-Propanol)	67-63-0	60.10	4.0	0.50		10	1.2	
Acetone	67-64-1	58.08	7.1	0.50		17	1.2	
Acetonitrile	75-05-8	41.00	1.2	0.50		1.9	0.84	
2-Butanone(MEK)	78-93-3	72.10	0.56	0.50		1.6	1.5	
Total Targ	et Compound Conce	entrations:	80	ppbv		160	ug/m3	

# **Qualifier Definitions**

B = Compound also found in method blank.

E= Estimated concentration exceeding upper calibration range.

D= Result reported from diluted analysis.

Tentatively Identified Compounds	CAS#	MW(1)	Result ppbv		Q	Result ug/m3	Retention Time	Comments
Ethane, 1,1-difluoro-	000075-37-6	66	1.9		JN	5.0	5.23	
Unknown		92	2.3		JN	8.7	5.74	
Unknown		92	2.0		JN	7.4	7.86	
Total TIC Concentrations:		6.2	vdqq		21	ug/m3	-	

# **Qualifier Definitions**

(1) = If unknown, MW is assigned as equivalent Toluene (92) for ug/m3 conversion purposes.

B = Compound also found in method blank.

J= Estimated value based on a 1:1 response to internal standard.

N= Presumptive evidence of compound based on library match.

			_		
Total Volatile Organic Compounds (TVOCs):	86	ppbv		180	ug/m3

# **USEPA TO-15**

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EMSL Analytical, Inc. 200 Route 130 North Cinnaminson, NJ 08077 Ph. (800) 220-3675 Fax (856) 786-0327

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Ph. (800) 220-3675 Fax (856) 786-0327	100	a a	plan		.tio	Ë	卜			T	T		12Eb∀	<del>  ``</del>	_	-	_						4	catio	9	Reason for Exchange (circle appropriate)	Receiving	Receiving	Receiving	Receiving	Receiving
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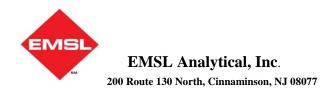
TO-FM-12 Sample Information Revision 9 Effective Date: January 22, 2018

# TO-15 Sample information A 9:51

Please fill out this worksheet in addition to the Chain of Custody form. This information helps us to best analyze your samples, achieve requested TAT, and provide you with helpful interpretation information.

requested TAT, and provide you w	itn neipjui int	erpretation inf	orm	otion.
COMPANY: SAR ENV	caon	PINSI	_	Consucezna
Contact Person:				
Name: ALEX G	アルシ			
E-mail: ALEX CORE	NYZRO	me	0,	racconsuctant, com
Additional E-mails:				
Telephone #: 303 - 29	१३ - ह	39 65		
Library Search requested: A library search (aka Tentatively Identified compounds. If you are performing an individual your sample.	d Compounds) w loor Air Quality (	rid identify up to 2	] N( 20 of ion, l	O The largest, non-target peaks that are not part of the standard TO-15 list of 74 the library search is recommended to provide you with all available information for
Sample Type:				
Indoor Air Quality (Home/Office   IAQ (Industrial)   Other:   Sample Description:	•)		••••	[     Soil Gas/Sub Slab
PLEASE NOTE: The result forms we pro- agency. If you would like that information	vide will not ind on, please check	icate whether you off below which	ur re regu	rsuits have exceeded any Exposure Limit criteria established by any regulatory ulatory comparison forms you would like to receive.
[ ] OSHA PELS/NIOSH RELS	combined form		ſ	) Potential Sources of Compounds found in your IAQ semple
[ ] EPA RSLs - 11/2017	Residential	industrial	D	TVOC (Library Search Required for this format)
NJ DEP 1/2018 - Circle one:	VI-Indoor AQ	VI-Soil Gas	1	) Ohio 4/2013 - Circle one: Residential Commercial
[ ] NC DENR 4/2014 - Circle one:	Residential	Non-residential	(	] Indiana Dept Env Mgmt Screeening Levels 3/2016
PA DEP - 11/2016	indoor Air		(	) Vermont DEP IROCP 4/2022 (soil gas only)
[ ] PA DEP- 11/2016: Sub Slab Soil Gas	OR Near Source S	oil Gas	E	] California OEHHA 2/2012
[ ] CA HHSL 11/2004 -Circle one:	Indoor Air	Soil Gas	l	] Other; these are the compounds I want reported:
Please note: There is an additional charge Cinnaminson NJ Laboratory.	for any of the te	sts below. USEPA	A TO	-3 AND ASTM 5504 analyses can be performed from your canister at the
US EPA TO-3 via GC/HD (choose one	e below):	AST	TM-	DSS04 via ac/sco (choose one below): "
[ ] C <sub>1</sub> -C <sub>6</sub> hydrocarbons [ ] Methane only				ffur Scan (H,S, COS, MeSH, EtSH, DMS) S only
*Note: Hold time for sulfur gases is on Friday. Analysis performed out of hol	s 1 day from coli d time will have	ection. Please sch a notation in the	hedu repo	ie your sample collection so samples are received in the lab prior to noon ort.
We can provide the following CMS tests for IAQ/Screening purposes ONLY. EMSL reyour sales rep for the proper media. Pleas	commends alter	nate field samplin	ng ted	n and Huntington Beach laboratories. Please note these tests are to be used for chniques for these parameters (with the exception of water vapor); please contact or any of the tests below.
Dragger CMS analyzer: CO [ 4CO <sub>2</sub> [ JNH <sub>3</sub>	( JO2 ( J/	Water Vapor		
Sample Retention Policy: All conisters on your project scope is fully addressed. Car customer account representative quickly.	ıs may be retakı	be retained for a led for a longer po	one d eriod	ay after results are reported. Please review your results promptly to ensure I of time, but arrangements to hold your cans must be made through your

Controlled Document
Confidential Business Information/Property of EMSL Analytical, Inc.



# EMSL Order ID: 491800613

Attn: Alex Green Customer ID: SREC85

S&R Environmental Consulting, Inc.

5801 Logan Street, #200 Date Received: 7/6/2018

**Denver, CO 80216** 

Project: EPA 5th Floor

Report Date: 7/9/2018 Data Analyzed: 7/6/2018

# Fixed Gas Analysis by Using The Draeger CMS (Chip Measurement System)

Sample ID	Identification	Compound	Detection Limit (ppmV)	Sample Result (ppmV)
491800613-1	5-CL-TO15	Carbon Monoxide	6.0	<6.0
491800613-1	5-CL-TO15	Carbon Dioxide	240	390

K. Wolkowicz	Marge Howley
Analyst	Lab Manager

Industrial Hygiene Chain of Custody EMSL Order Number (Lab Use Only): -281803016

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CAL, IN	O NOR	1J 0807	20-367	58-35
NALYTI	<b>UTE 13</b>	ISON, N	(800)2	EAY: (856) 858-3502
EMSL ANALYTICAL, INC	200 ROUTE 130 NORTH	INNAMINSON, NJ 08077	PHONE: (800) 220-3675	- XV
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Report To Contact Name:	ntact Name: Mex	- 1	Green			Bill To (	Bill To Company:	5/11	\		Client ID #:	
Company Name:	SAR	Environment	14 KI (6036	4 (472		Attention To:	n To:	SHIM	2			
Street: 580	301 609.00	ば	# 200	7		Street:						
City: DEAVES	State	State/Province: (		Zip/Postal Code:	B0216	City:		_	State/Province:	ince:	Zip/Postal Code:	de:
Phone: 307	Phone: 301 - 5 48 - 1/75 Fax:	75 Fax:				Phone:				Fax:		
Project Name: ZPA	- EPA - Floor	1	Clearance	6	Email Res	Email Results To: 4 / EX (0) S [ EAV : 10 A M P A 15	KØSTERN	FORMPA	1	U.S. State who	U.S. State where Samples Collected:	acted:
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Тиглагош	Turnaround Time (TAT) – Please Check: If No	Please C	heck: If No S	Selection Made, Standard 2 Week TAT Will Apply	e, Standa	rd 2 Week	TAT Will	Apply	Media Type:	e: Var1043	2	
2 Week	1 Week	☐4 Day	☐3 Da	Day	1 Day	)ay     0	Other (Call Lab)	Lab)	Manufacturer/Part #:	rer/Part #:	Lot #:	#
Client Sample ID	Location/Description	cription	Analyte / Method	Media	Flow (lpm)	Sample Time	ime Off	Volume /	Sample	Sample	Comments	ents
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Note: Most NIC	Note: Most NIOSH and OSHA methods require field blanks.	thods requ	ire field blanks.	4 1	d sampler's	s responsibilit	y to submit	the proper i	number of fie	It is the IH field sampler's responsibility to submit the proper number of field blanks and duplicates.		
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Comments:

Released By



Chain of Custody  EMSL Order Number (Lab Use Only)	Hygiene Sustody (Lab Use Only):		EMSL ANALYTICAL, INC. 200 ROUTE 130 NORTH CINNAMINSON, NJ 08077
= 2818030 T	03015		PHONE: (800) 220-3675 FAX: (856) 858-3502
Report To Contact Name: Mex Green	Bill To Company:		Client ID #:
Company Name: SAR Environma & Consulting	Attention To:	7	
Street: 5801 Logan St. 4200	Street:		
City: De 1145 State/Province: CO Zip/Postal Code: 802/6	City:	State/Province:	Zip/Postal Code:
Phone: 307 - 5 48 - 1/75 Fax:	Phone:	Fax:	
Project Name: EPA - Floor 5 - Clearance, Email Resul	Email Results To: + 10x (05 Fenv: 500 M PAF)		U.S. State where Samples Collected:
# Samples in Shipment 2 AT Date of Shipment: 7/6 //8 Purchase O	8 Purchase Order: 0/8 0/3 Sampled	Signatur	na

5-CL-FORM

-CL-4PCH

Sample ID

Location/Description

Analyte / Method

Media

(lpm)

On O

2

/ Area Volume

Sample Type

Sample Date

Comments

Sample Time

Client

2 Week

1 Week

4 Day

☐3 Day

Day

1 Day Other (Call Lab)

Manufacturer/Part #: Media Type:

Lot #:

V& 57063

Turnaround Time (TAT) - Please Check: If No Selection Made, Standard 2 Week TAT Will Apply

# **USEPA TO-15**

Maunx	Analysis		Full Deliverables (Surcharge may apply)	~	O J Day	□ 1 Day	☐ soay
		Report)	Reporting Format: Results Only (Standard Lab Report)		s): 🔲 10 Day Standard	(in Business Day	Turnaround Time (in Business Days):
	510810	Purchase Order: 0 18 013	Email Results To: 4/ex05/601/100 Menty/ 605//m. go Project Name: EPA - 5th Floor	Projec	amental Easelfon	slex@scenvio	Email Results To:
202	Sample Collection Zip Code: 86 202	Sample Collectic	lo.: Fax:	Phone No.:	Fax:	-548-1175	Phone No.: 303 -548-1175 Fax:
	81/9/4	Date Shipped:	2:	Address 2:		c	Address 2:
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٨	in); //	Sampled By (Sign):	Bill To Company:	Bill To C	CARP)	t Name: Alex	Report To Contact Name: Alex Green
	Fax (858) 786-0327	Fax (8)	-491800613	<u></u>	EMSL Order Number (Lab Use Only):	EMSL Order N	EMS, ANALYTICAL, INC.
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RECEIVED EMSL CINNAMINSON. N.J. TO-FM-12 Sample Information Revision 9 Effective Date: January 22, 2018

# TO-15 Sample information A 9:51

Please fill out this worksheet in addition to the Chain of Custody form. This information helps us to best analyze your samples, achieve requested TAT, and provide you with helpful interpretation information.

	sted TAT, and provide you w	vith helpful int	erpretation i	infor	rmation.
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Additio	na) E-mails:				
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Alibrar compoi your sa	unds. If you are performing an in mple.			io 20	NO of the largest, non-target peaks that are not part of the standard TO-15 list of 74 n, the library search is recommended to provide you with all available information for
Sample	<i>,</i>				•
1	[ Indoor Air Quality (Home/Offic   IAQ (Industrial)   Other:   pia Descriptions	c) 			[ ] Soli Ges/Sub Slab
				-	results have exceeded any Exposure Limit criteria established by any regulatory egulatory comparison forms you would like to receive.
( )	OSHA PELS/NIOSH RELS	combined form			Potential Sources of Compounds found in your IAQ sample
[ ]	EPA RSL1 - 11/2017	Residential	Industrial		TVOC (Library Search Required for this format)
1	NJ DEP 1/2018 - Circle one:	VI-Indoor AQ	VI-Soll Gas	1	Ohlo 47019 -Circle anei Residential Commercial
- t	NC DENR 4/2014-Circle ones	Residential	Non-resident	Uat	[ ] Indiana Dapt Env Mgmt Screeening Levels 8/2016
1	PA DEP - 11/2016	indoor Air	•		[ ] Vermont DEP IROCP 4/2012 (soliges only)
[ ]	PA DEP- 11/2015; 5ub \${ab \$0   Ga:	s OR Near Source S	ioil Gas		[ ] California GEHHA 2/2022
(	CA HHSL 11/2004-Circle ane:	Indoor Air	Soil Gas		[ ] Other; these are the compounds I want reported:
	note: There is an additional charge inson NJ Lebaretory.	e for ony of the te	ests below. USI	EPA1	TO-3 AND ASTM 5504 analyses can be performed from your conister at the
US	EPA TO-3 via GC/HD (choose on	ie below):		ASTA	YI-D5504 was cysco (choose one below): T
	C <sub>3</sub> -C <sub>6</sub> hydrocarbons   Mathana only			-	Sulfur Stan (H <sub>2</sub> S, COS, MeSH, EtSH, DMS) H <sub>2</sub> S only
*No	te : Hold time for sulfur anses i	le 1 day from coll	lertion Diente	echa	dule your sample collection so samples are received in the lab prior to acon
on Frid	ay. Analysis performed out of ho	id time wiil have	a notation in t	he re	port.
Vont sei		ecommends alter	nate field samj an additional c	pilng	on and Huntington Beach laboratories. Please note these tests are to be used for techniques for these parameters (with the exception of water vapor); please contact e for any of the tests below.
your pre	Retention Policy: All conisters as oject scope is fully addressed. Co er account representative quickly	ens may be retain	baretoined fo led for a longer	r one	e day ofter results are reported. Please review your results promptly to ensure lad of time, but arrangements to hold your cans must be made through your



2601 Agriculture Drive Madison, WI 53718 Phone: (800) 446-0403 Fax: (608) 224-6213 Web: wohl-lab.org

ALEX GREEN
S & R ENVIRONMENTAL CONSULTING
STE 200
5801 LOGAN ST
DENVER, CO 80216

Lab Workorder ID 392403

Visit/Project ID EPA / BOOTS

**PO** 018013

 Received
 July 6, 2018

 Reported
 July 13, 2018

 Report ID
 5497857

**Previous Report IDs** 

# Dear ALEX GREEN:

Enclosed are the analytical results for sample(s) received by the laboratory on July 6, 2018. All samples received were acceptable, results were not blank corrected, and all quality control met laboratory standards unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact the lab.

Sincerely,

Steve Strebel, Laboratory Director

Analyst - JOHN GLOWACKI

Page 1 of 2 Report ID: 5497857



2601 Agriculture Drive Madison, WI 53718 Phone: (800) 446-0403 Fax: (608) 224-6213

Web: www.wohl-lab.org

# **Final Report**

Lab ID: 392403001 Sample ID: 5-CL-CAP Media: OVS-7 TUBE

Sampling Date: 7/5/2018 Matrix: Air Sampled Time:

Laboratory Control Spike failed with 74.8% recovery. The low control limit for this spike RESULT

is 77.2%

Analyte	Method	Analysis Date	Air Volume	Reporting Limit	Front	Rear	Total	Air Concentration	TWA
Caprolactam (Dust and Vapor)	OSHA PV2012	7/12/2018	100 L	1.5 ug	<1.5 ug	<1.5 ug	<1.5 ug	<0.015 mg/m3	

# Abbreviations:

mg = milligrams ppm or ppmv = parts per million /m3 = per cubic meter ug = micrograms ppb or ppbv = parts per billion ng = nanograms

< Less Than. The analyte, if present, is at a level too low to be accurately quantitated by the method used

# **End of Analytical Report**

The results in this report apply only to the samples, specifically listed above, and tested at the Wisconsin Occupational Health Laboratory

This report is not to be reproduced except in its entirety

Page 2 of 2 Report ID: 5497857



# 12421 W. 49TH AVENUE, UNIT #6 WHEAT RIDGE, CO 80033 - (303) 463-8270

# NUISANCE DUST - TOTAL/RESPIRABLE

NIOSH 0500/0600 METHOD(S) - PAGE 1 OF 1

CLIENT: ANALYSIS DATE: 7-6-18

S&R ENVIRONMENTAL CONSULTING REPORTING DATE: 7-9-18
5801 LOGAN STREET, SUITE 200 RECEIPT DATE: 7-6-18
DENVER, CO 80216 CLIENT JOB NO.: 018013

PROJECT TITLE: EPA - 5TH FLOOR

DCMSL PROJECT: SREC696

NUISANCE DUST

CLIENT NUMBER	VOLUME (L)	DUST (1) (mg)	TOTAL/RESPIRABLE (1) (mg/m3)	
175564/5-CL-TD	200	< 0.001	<0.001	
175568/5-CL-RD	100	<0.001	<0.001	
	NUMBER 175564/5-CL-TD	NUMBER (L) 175564/5-CL-TD 200	NUMBER         (L)         (mg)           175564/5-CL-TD         200         <0.001	CLIENT NUMBER         VOLUME (L)         DUST (1) (mg)         TOTAL/RESPIRABLE (1) (mg/m3)           175564/5-CL-TD         200         <0.001

(1) DUST IS CONSIDERED RESPIRABLE BASED ON SAMPLING METHOD. SAMPLES MUST BE COLLECTED USING A CYCLONE DEVICE.

THE SAMPLES WERE ANALYZED USING THE NIOSH 0500/0600 METHOD(S). PREWEIGHED FILTERS WERE POST WEIGHED TO DETERMINE TOTAL NUISANCE DUST COLLECTED ON THE FILTERS. THE COEFFICIENT OF VARIATION OF THIS METHOD AS STATED BY NIOSH 0500 IS 0.043 TO 0.145 FOR A RANGE OF 0.30mg TO 2.00mg PER SAMPLE. THE RANGE STUDIED IN THIS METHOD IS 0.5 TO 10mg/m3.

THE SAMPLES WERE WEIGHED WITH A METTLER XP56 ANALYTICAL MICROBALANCE WITH A REPORTING LIMIT OF  $\pm 0.006$ mg. THE BALANCE IS CERTIFIED TO BE WITHIN INSTRUMENT SPECIFICATIONS AND TRACEABLE TO NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY.

NO BLANK WAS SUBMITTED BY THE CLIENT. THE RESULTS ARE NOT BLANK CORRECTED.

THE SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION. THIS TEST REPORT RELATES ONLY TO THE ITEMS TESTED. THIS REPORT MAY NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE WRITTEN APPROVAL OF THE LABORATORY.



LORI WOOD, ANALYST



(303) 463-8270/(800) 852-7340 (303) 463-8267 – fax

Date/Time Received	DCMSL Group No	DCMS	SL Log No
Samples Submitted By: Accompany: Address:	Field Data Sheet/Cha	in of Custody  Job/P.O. #	018013
A- (		Project Title E	PA-5th Floor
Phone:	1-1175 to Alex		mples are archived for 6 months ents are made. All other samples onths.
Turnaround Time Requested:  Standard (3 to 5 Business I 24 Hour Rush Procedure Requested:	Days)		sh (Asbestos Only)
ASBESTOS  Bulk [ ] Standard EPA	DUST & SILICA  [ ] Silica – Air NIOSH  [ ] Silica – Bulk  [ ] Silica – Bulk Respi  [ Dust – NIOSH 050  Other Analysis: RD	[] X-r rable [] X-r 0/0600 [] SEI	tical Microscopy ay Diffraction – Scan/Search ay Diffraction – Clay/Bulk
Client Sample No.:  1 5-CL - R D	Sample Date	Air Volume 200	Other Information  5+h Floor
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9			
Relinquished By:	Date/Time////	Received By:	Date/Time 7/6/18/11/30



# **USEPA TO-15**

# External Chain of Custody/ Field Test Data Sheet

EMSL Analytical, Inc. 200 Route 130 North Cinnaminson, NJ 08077 Ph. (800) 220-3675 Fax (856) 786-0327

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			18	\ \ 2	,											7/6/118	Stop Date	Barometric Pres. ("Hg):	Sampling Stop Information	quired!	Other	3 Day	andard/	1 Jon Glas			200	-		Only):
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Receiving	Receiving	Receiving	Receiving	chan	O 15):	ation										X	USEP/ NJDEF	A TO	5-1 TO	5	4				on Zi	7/	les:	ame):	gn):	Fax (856) 786-0327
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# **TO-15 Sample information**

Please fill out this worksheet in addition to the Chain of Custody form. This information helps us to best analyze your samples, achieve requested TAT, and provide you with helpful interpretation information.

Company:			,	
COMPANY GAR ENV	ないのしん	OTOSO	1.6	Consucrance
Contact Persons		74-40-41-41-41-41-41-41-41-41-41-41-41-41-41-		
Name: ALEX	2 <i>は'55</i> ~			
E-malls ALEX COR.	テントエク	>~\~\?	₩.	TALCONSULTENG, COM
Additional E-mails:				
	07 6	<u> </u>	_	
Telephone #: 303 ~ A	(१३ - इ	<u> </u>		
Library Search requested: A library search (oko Tentotively Identi) compounds. If you are performing an I your sample.	ied Compounds ) v ndoor Air Quality	YES vir identify up t or odor investig	to Z	NO Dof the largest, non-target peaks that are not part of the standard YO-15 list of 74 on, the library search is recommended to provide you with all available information fo
Sample Type:				
Andoor Air Quality (Home/Olf     IAQ (Industrial)     Others	(e)			[ ] Soil Gas/Sub Slab
Sample Description:				
PLEASE NOTE: The result forms we pragency. If you would like that informa	ovide will not ind tion, please check	icate whether colf below whi	you ich r	r results have exceeded any Exposure Limit criteria established by any regulatory egulatory comparison forms you would like to receive.
( ) OSHA PELS/NIOSH RELS	combleed form			[ ] Potential Sources of Compounds found in your tAQ sample
[ ] EPA RSLs - 11/2017	Residential	Industrial		TVOC (Library Search Required for this format)
NS DEP 1/2018 - Circle one:  NG DENR 4/2014 - Circle one:	VI-Indoor AQ Residential	VI-Soil Gas	1.1	1 10hlo 4/1013 - Circle one: Residential Commercial
[ ] PA DEP - 11/2016	Indoor Air	Non-resident	141	
PA DEP- 11/2016: Sub Slab Soil G		411.Ca.		[ ] Vermont DEP IROCP 4/2012 (soll gas only)
( ] CA HHSL 11/2004 -Circle one:	Indoor Air	Soll Gas		C College the community of the community of the college of the col
Pleose note: There is an additional charg	e for ony of the te		PA	[ ] Other; these are the compounds I want reported:  (O-3 AND ASTM 5504 analyses can be performed from your canister at the
Cinnaminson NI Laboratory.				the second of the second of the
US EPA TO-3 via GC/HD (choose or	ie below);	A	AST	M-DS504 № sc/sco (choose one below): "
( ) C <sub>3</sub> ·C <sub>5</sub> hydrocarbons ( ) Methane only				Sulfur Scan (H,S, COS, MeSH, EtSH, DMS) 1,S only
$^*Note$ : Hold time for sulfur gases on Filday. Analysis performed out of ho	ls 1 day from colle ld time will have a	ection. Please s a notation in th	iche he ro	fule your sample collection so samples are received in the lab prior to noon port.
We can provide the following CMS tests: AQ/Screening purposes ONLY. EMSL ri Your sales rep for the proper media. Plea	scommends afferr	rate field sampl	ling	on and Huntington Beach Taboratories. Please note these tests are to be used for techniques for these parameters (with the exception of water vapor); please contact e for any of the tests below,
Draeger CMS Analyzers	{			
iample Retention Policy: All conisters at Our project scope is fully addressed. Co ustomer account representative quickly	ns may ae retaine	be retoined for ad for a longer	one peri	day ofter results are reported. Please review your results promptly to ensure od of time, but arrangements to hold your cans must be made through your



# Industrial Hygiene Chain of Custody EMSL Order Number (Lab Use Only):

EMSL ANALYTICAL, INC. 200 ROUTE 130 NORTH CINNAMINSON, NJ 08077 PHONE: (800) 220-3675

	X								FAX: (856) 858-3502
Report To Contact Name:	7	184			Bill To Company:				Client ID #:
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# WISCONSIN OCCUPATIONAL HEALTH LABORATORY (WOHL) SAMPLE SUBMISSION FORM

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Y: Relinquished			2-01-020	CUSTOMER FIELD#		♦ PLEASE GROUP SAMPLES BY MEDIA USED AND ANALYSIS REQUESTED.♦	RUSH { must	210	/Boots	(C)	Social
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US Postal Service Wisconsin Occupational Health Lab PO Box 7996 Madison, WI 53707-7996				SIZE OF AREA WIPED EX: 2 IN x 2 IN	WIPE SAMPLES	ANALYSIS REQU	DRITY DR	Date Samp	Email Address  August Special Instructions  August Special Instructions	FAX#	WOHL COMP#
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